the Applicants' RELATED ART. The Examiner also rejected claims 10, 23, 27 and 35 over Gilhousen et al. in view of Lomp and a general reference to ordinary skill in the art. The Examiner then rejected claims 7, 13, 20 and 32 over Gilhousen et al. and Lomp, in further view of Reed et al. (U.S. patent 5,574,984). Finally, the Examiner rejected claims 4, 15, 25, 26, 36 and 37 under 35 U.S.C. 103(a) over Gilhousen et al. and Lomp. The Applicants have amended independent claims 1, 16 and 28 and some claims dependent therefrom to require certain aspects of the present invention not disclosed by the cited references.

ARGUMENT

In prior telephone conversations with the Examiner, attorney for Applicants and the Examiner discussed the references cited in the Office Action and certain aspects of the Applicants' invention. Based upon these conversations the Applicants amended the claims as they now appear. In light of the amendments, the Applicants now believe that the claims distinguish over the cited references. Prior to discussing the amended claims in light of the prior art references, the Applicants discuss the present invention generally as well as the cited prior art references.

The Present Invention

The present invention is directed toward a wireless communication system that provides wireless services within a respective service area to at least one subscriber unit, the subscriber unit that operates in such a system and a method of operating such a wireless communication system. Wireless transmissions from a base station of the system to the subscriber unit are made on the forward link while wireless transmissions from the subscriber unit to the base station are

made on the reverse link. Reverse link power control is implemented in an effort to have all reverse link transmissions (e.g., from the subscriber unit and other subscriber units) arrive at the base station at an equal power level. In reverse link power control, the base station periodically directs the subscriber unit (e.g., via a power control bit periodically transmitted on the forward link) to increment or decrement the transmit power of its reverse link transmissions.

According to the present invention, as now claimed, the subscriber unit supports a plurality of reverse link power control step sizes. A reverse link power control step size is an adjustment size by which the power level of reverse link transmissions are incremented or decremented. Based upon system conditions and reverse link power control step sizes supported by the subscriber unit, the base station selects a reverse link power control step size for the subscriber unit. Further, the base station directs the subscriber unit to make further adjustments to the power level of reverse link transmissions by the selected power control step size. Then, based upon periodic directions to increment or decrement the power level of reverse link transmissions, as received from the base station on the forward link, the subscriber unit increments or decrements the power level of reverse link transmissions by the selected power control step size.

The Gihousen et al. Reference

The Gilhousen et al. reference is directed, generally toward REVERSE LINK, CLOSED LOOP POWER CONTROL IN A CODE DIVISION MULTIPLE ACCESS SYSTEM. More specifically, the Gilhousen et al. reference is directed toward reverse link power control that enables a mobile telephone to operate at a 100% duty cycle while providing closed loop power control. (Gilhousen et al., title and abstract).

The Lomp Reference

The Lomp reference is directed to a SPREAD SPECTRUM ADAPTIVE POWER CONTROL SYSTEM AND METHOD. Particularly, the Lomp reference discloses closed loop power control on the reverse link. Moreover, the Lomp reference discloses an Adaptive Power Control (APC) system in which a subscriber unit adjusts its own step size, adaptively, in response to sequences of power control bits received from a base station on the forward link. Such step size adjustment is made solely by the subscriber unit in response to the power control bits. (Lomp, column 20, line 56 through column 22, line 31).

The Reed et al. Reference

The Reed et al. reference is toward adjustment of forward link transmissions to a subscriber unit. Based upon multipath fading, as measured by the subscriber unit or base station, the base station adjusts its power transmission level on the forward link.

With Respect to Amended Claim 1, and claims 2-15 dependent therefrom

Amended independent claim 1 is directed toward a wireless communication system that provides wireless services within a respective service area to at least one subscriber unit. Wireless transmissions from a base station of the system to the subscriber unit are made on the forward link while wireless transmissions from the subscriber unit to the base station are made on the reverse link. The subscriber unit supports a plurality of reverse link power control step sizes. Based upon system conditions and reverse link power control step sizes supported by the subscriber unit, the base station selects a reverse link power control step size for the subscriber

unit. Further, the base station directs the subscriber unit to make further adjustments to the power level of reverse link transmissions by the selected power control step size. Then, based upon periodic directions to increment or decrement the power level of reverse link transmissions, as received from the base station on the forward link, the subscriber unit increments or decrements the power level of reverse link transmissions by the selected power control step size.

The Gilhousen et al. and Lomp references fail to disclose the selection of a power control step size by the base station. Further, the Gilhousen et al. and Lomp references fail to disclose the selection of a power control step size by the base station based upon "system conditions and reverse link power control steps sizes supported by the subscriber unit." Moreover, the Gilhousen et al. and Lomp references fail to disclose "the base station directing the subscriber unit to make adjustments to the power level of reverse link transmissions by a selected power control step size." Thus, the Gilhousen et al. and Lomp references are deficient for at least these reasons.

Not only do the cited references fail to disclose the limitations of amended claim 1, the references fail to address problems solved by the present invention as claimed. Since only the base station is privy to system conditions pertinent to selection of a proper power control step size, e.g., voice and data channel assignments, channel activity levels, multiple channel assignments to a single subscriber unit, only the base station may select a power control step size proper for the channel conditions. Neither the Gilhousen et al. nor the Lomp reference disclose a the base station that selects a power control step size subsequently used by a subscriber unit.

Further, the Lomp references teaches away from the present invention, and causes problems by implementing APC in the subscriber unit. The Lomp reference, if implemented, would introduce problems that are overcome by operation according to amended claim 1 relating

to consistency of operation by subscriber units. Lomp discloses an APC feature implemented in the subscriber unit that responds only to a power control bit. Because power control bits are prone to error, do not indicate the magnitude of correction required and do not otherwise relate system conditions, a subscriber unit operating according to the Lomp reference could cause system operation to be worse as compared to a subscriber unit having a fixed power control step size.

Thus, the Gilhousen et al. reference and the Lomp reference fail to render obvious claim 1 as now amended. For at least these reasons, claims 2-16, which are dependent from claim 1, are also not rendered obvious by the cited references.

With Respect to Amended Claim 16 and claims 17-27 dependent therefrom

Independent claim 16 is directed toward a subscriber unit for use with a wireless communication system having at least one base station. The subscriber unit includes a processing unit and a radio transceiver unit. The radio transceiver unit communicates with the base station on both a forward link and a reverse link. The radio transceiver unit is capable of incrementing or decrementing the power level of transmissions on the reverse link by a plurality of supported power control step sizes. The subscriber unit receives a selected power control step size from the base station that was selected by the base station based upon system conditions and the plurality of power control step sizes supported by the subscriber unit. The subscriber unit periodically increments or decrements the power level of transmissions on the reverse link by the power control step size that was selected by the base station, the incrementing or decrementing performed in an attempt to cause the transmissions on the reverse link to arrive at the base station

at desired power levels. Thus limitations of amended claim 16 are similar to those of amended claim 1, but from the perspective of a subscribing unit.

While the Lomp reference discloses a subscriber unit having APC and that supports a plurality of power control step sizes, it does disclose a subscriber unit that sets its power control step size based upon a selection made by the base station. Further, the Lomp reference does not disclose a subscriber unit in which a power control step size may be set and thereafter employed in all reverse link power control adjustments. Gilhousen et al. also fails to disclose these important limitations as required by amended claim 16.

Thus, for at least these reasons, amended claim 16 is not rendered obvious by the combination of Lomp and Gilhousen et al., or any other references cited in the Office Action. Further, for at least these reasons, claims 17 through 28, which are dependent from claim 16, also distinguish over the cited references.

With Respect to Amended Claim 28 and claims 29-37 dependent therefrom

Independent claim 28 is directed toward a method of operating a wireless communication system that serves at least one subscriber unit. According to the method as claimed, a forward link and a reverse link are established between a base station of the wireless communication system and a subscriber unit, communications transmitted to the subscriber unit from the base station on the forward link and communications transmitted to the base station from the subscriber unit on the reverse link. The method also includes selecting, by the base station, a power control step size for the subscriber unit based upon system conditions and power control step sizes supported by the subscriber unit. The base station then directs the subscriber unit to use the selected power control step size for subsequent adjustments of the power level of

transmissions on the reverse link. Finally, the base station periodically directs the subscriber unit to increment or decrement the power level of transmissions on the reverse link by the selected reverse link power control step size to cause the transmissions on the reverse link to arrive at the base station at desired power levels.

Thus, limitations are required by amended claim 28 that are not disclosed by the Gilhousen et al. or Lomp references, such limitations previously described with reference to amended claim 1 and amended claim 16. For at least these reasons, amended claim 28 distinguishes over all cited references. Further, based upon at least these reasons, dependent claims 29-37, which are dependent from claim 28, also distinguish over the cited references.

With Respect to new claims 38-45

New claims 38 through 44 are directed to a signal transmitted from a base station to a subscriber unit in which the base station directs the subscriber unit to employ a particular power control step size for reverse link power control. Because none of the cited references disclose such a direction being made from a base station to a subscriber unit, independent claim 38 distinguishes over the cited references. Further, for at least these reasons, claims 39-44, which are dependent from claim 38, also distinguish over the cited references.

New claim 45 is directed toward a base station and includes same or similar limitations as are required by amended claim 1. Thus, for at least those reasons cited above for claim 1, new claim 45 also distinguishes over the cited references.

CONCLUSIONS

For the reasons cited herein, Applicants submit that claims 1-45 are in condition for allowance. Thus, a notice of allowance is courteously solicited. Please direct any questions or comments to the undersigned attorney. Enclosed is check #1296 for an additional claim fee of $340 (two (2) additional independent claims - $164 and eight (8) additional claims total - $176).

Respectfully submitted,

Date: October 16, 1998

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